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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,692	11/24/2003	Ji-Hoon Lee	Q77016	3216

23373 7590 07/29/2008

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EXAMINER	
BOKHARI, SYED M	

ART UNIT	PAPER NUMBER
2616	

MAIL DATE	DELIVERY MODE
07/29/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/718,692	LEE ET AL.	
	Examiner	Art Unit	
	SYED BOKHARI	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07/08/2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Applicant's amendment filed on July 08th, 2008 has been entered. Claims 1-19 are pending in this application, with claims 1, 7, 13 and 19 being independent.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claim 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aweva et al. (US 6,894,974 B1) in view of Hayakawa (USP 5,042,029).

Aweva discloses a communication system for controlling packet transmission rate to reduce congestion with the following features: regarding claim 1, a communication system (10), comprising: a transmitter (12) for transmitting one or more data packets; at least one receiver (24) connected to the transmitter, for receiving the data packets and transmitting to the transmitter one or more response signals in response to the received data packets (Fig. 1, packet network, see "plurality of network elements" recited in column 4 lines 19-28); a multiplexer (50) for multiplexing and transmitting to the transmitter the response signals transmitted from the receiver and transmitting the transmitted data packets from the transmitter to a corresponding receiver (Fig. 2, network elements, see " multiplexer 50" recited in column 5 lines 53-65); the multiplexer provided with a queue status monitor for monitoring a queue status of at least one of the transmitted data packets and the response signals (Fig. 2, network elements, see "queue monitor" recited in column 3 lines 39-48).

Aweva et al. does not disclose the following features: regarding claim 1, a congestion control adjuster for instructing the receiver to hold or compress the response signals based on the monitored queue status and regarding claim 18, the congestion

control adjuster instructs the receiver to hold or compress the response signals based on the monitored queue status received from the queue status monitor.

Hayakawa discloses a communication system with congestion control apparatus for end-to-end traffic with the following features: regarding claim 1, of a congestion control adjuster (12-1) for instructing the receiver to hold or compress the response signals based on the monitored queue status (Fig. 1, network elements, see "congestion control apparatus" recited in column 2 lines 16-34) and regarding claim 3, wherein the congestion control adjuster instructs the corresponding receiver to hold the response signals if the queue status of the monitored data packets is over a first threshold (Fig. 2, delay time control, see "controlling the amount of delay" recited in column 2 lines 7-18) and regarding claim 18, the congestion control adjuster instructs the receiver to hold or compress the response signals based on the monitored queue status received from the queue status monitor (Fig. 1, network elements, see "congestion control apparatus" recited in column 2 lines 16-34).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the system of Aweva et al. by using the features, as taught by Hayakawa, in order to hold the response signals in the buffer based on the monitored queue status. The motivation is to enhance the functionality of the receiver for avoiding congestion in a cost effective manner.

5. Claims 2, 4-5, 7-11, and 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayakawa (USP 5,042,029) in view of Aweva et al. (US 6,894,974 B1) as applied to claim 1 above, and further in view of Guttman et al. (USP 7,031,259).

Hayakawa and Aweva et al. described the claim limitations as discussed in paragraph 4 above. Hayakawa further discloses the following features: regarding claim 2, wherein the receiver includes a response signal holding/compressing unit for, if instructed by the congestion control adjuster to hold the response signals (Fig. 2, delay time control, see "a delay circuit" recited in column 2 lines 30-34) and holding the response signals for a first predetermined period of time (Fig. 2, delay time control, see "preset value of programmable timer 31" recited in column 4 lines 57-66); regarding claim 4, if the queue status of the monitored data packets is under a first threshold and over a second threshold (Fig. 1, packet switched communication system, see "predefined threshold value" recited in column 3 lines 31-41); regarding claim 7, a congestion control adjuster for instructing the receiver to hold or compress the response signals based on the monitored queue status (Fig. 2, delay time control, see "a delay circuit" recited in column 2 lines 30-34); regarding claim 8, wherein the receiver includes a response signal holding/compressing unit for, if instructed by the congestion control adjuster to hold the response signals (Fig. 2, delay time control, see "a delay circuit" recited in column 2 lines 30-34) and holding the response signals for a first predetermined period of time (Fig. 2, delay time control, see "preset value of programmable timer 31" recited in column 4 lines 57-66); regarding claim 9, wherein the

congestion control adjuster instructs a corresponding receiver to hold the response signals if the queue status of the monitored data packets is over a first threshold (Fig. 2, delay time control, see "controlling the amount of delay" recited in column 2 lines 7-18); regarding claim 10, if the queue status of the monitored data packets is under a first threshold and over a second threshold (Fig. 1, packet switched communication system, see "predefined threshold value" recited in column 3 lines 31-41); regarding claim 13, instructing the receiver to hold or compress the response signals based on the monitored queue status (Fig. 2, delay time control, see "controlling the amount of delay" recited in column 2 lines 7-18) and holding the response signals for a first predetermined period of time if the holding of the response signals is instructed (Fig. 2, delay time control, see "a delay circuit" recited in column 2 lines 30-34); regarding claim 14, wherein a congestion control adjuster instructs a corresponding receiver to hold the response signals if the monitored queue status of the data packets is over a first threshold (Fig. 2, delay time control, see "controlling the amount of delay" recited in column 2 lines 7-18) and regarding claim 15, if the monitored queue status of the data packets is under a first threshold and over a second threshold (Fig. 1, packet switched communication system, see "predefined threshold value" recited in column 3 lines 31-41).

Aweva et al. also discloses the following features: regarding claim 7, a communication system (10), comprising: at least one transmitter (12) for transmitting one or more data packets; at least one receiver (24) belonging to a private network and connected to the transmitter, for receiving the data packets and transmitting to the

transmitter one or more response signals in response to the received data packets (Fig. 1, packet network, see "plurality of network elements" recited in column 4 lines 19-28) and a gateway (50) for arbitrating a communication protocol between the transmitter and the private network (Fig. 2, network elements, see "multiplexer 50" recited in column 6 lines 45-52), the gateway provided with a queue status monitor for monitoring a queue status of at least one of the transmitted data packets and the response signals (Fig. 2, network elements, see "queue monitor" recited in column 3 lines 39-48); regarding claim 13, a communication method in which a receiver receiving data packets from a transmitter transmits to the transmitter response signals corresponding to the data packets (Fig. 1, packet network, see "plurality of network elements" recited in column 4 lines 19-28); monitoring a queue status of at least one of the data packets and the response signals (Fig. 2, network elements, see "queue monitor" recited in column 3 lines 39-48).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the system of Hayakawa by using the features, as taught by Aweva et al., in order to monitored queue status and holding the response signals for a first predetermined period of time. The motivation for implementing it for the receiver to hold the response signals is to enhance the functionality of the system to avoid congestion in a cost effective manner.

Aweva et al. and Hayakawa do not disclose the following features: regarding claim 2, if instructed by the congestion control adjuster to compress the response signals, compressing the response signals for a second predetermined period of time;

regarding claim 4, wherein the congestion control adjuster instructs the corresponding receiver to compress the response signals; regarding claim 5, wherein the congestion control adjuster instructs the corresponding receiver to compress the response signals and if the queue status of the monitored data packets is under a first threshold and the queue status of the response signals is over a second threshold; regarding claim 8, if instructed by the congestion control adjuster to compress the response signals and compressing the response signals for a second predetermined period of time; regarding claim 10, wherein the congestion control adjuster instructs a corresponding receiver to compress the response signals; regarding claim 13, compressing the response signals for a second predetermined period of time if the compression of the response signals is instructed; regarding claim 15, wherein a congestion control adjuster instructs a corresponding receiver to compress the response signals and if the monitored queue status of the data packets is under a first threshold and over a second threshold and regarding claim 16, wherein a congestion control adjuster instructs a corresponding receiver to compress the response signals and if the monitored queue status of the data packets is under a first threshold and the monitored queue status of the response signals is over a second threshold.

Guttman et al. discloses a communication system for scheduling of compressible and non-compressible packets with the following features: regarding claim 2, if instructed by the congestion control adjuster to compress the response signals (Fig. 4, scheduling compressible packets, see “step 110” recited in column 11 lines 25-29) and compressing the response signals for a second predetermined period of time (Fig. 1,

scheduling table, see "determining to compress" recited in column 3 lines 49-56); regarding claim 4, wherein the congestion control adjuster instructs the corresponding receiver to compress the response signals (Fig. 1, scheduling table, see "determining a high bit rate threshold" recited in column 4 lines 37-48); regarding claim 5, wherein the congestion control adjuster instructs the corresponding receiver to compress the response signals (Fig. 1, scheduling table, see "determining to compress" recited in column 3 lines 49-56) and if the queue status of the monitored data packets is under a first threshold and the queue status of the response signals is over a second threshold (Fig. 1, scheduling table, see "high and low thresholds" recited in column 3 lines 45-50); regarding claim 8, if instructed by the congestion control adjuster to compress the response signals (Fig. 4, scheduling compressible packets, see "step 110" recited in column 11 lines 25-29) and compressing the response signals for a second predetermined period of time (Fig. 1, scheduling table, see "determining to compress" recited in column 3 lines 49-56); regarding claim 10, wherein the congestion control adjuster instructs a corresponding receiver to compress the response signals (Fig. 1, scheduling table, see "determining a high bit rate threshold" recited in column 3 lines 49-56); regarding claim 11, wherein the congestion control adjuster instructs a corresponding receiver to compress the response signals (Fig. 1, scheduling table, see "determining to compress" recited in column 3 lines 49-56) and if the queue status of the monitored data packets is under a first threshold and the queue status of the response signals is over a second threshold (Fig. 1, scheduling table, see "high and low thresholds" recited in column 3 lines 45-50); regarding claim 13, compressing the

response signals for a second predetermined period of time if the compression of the response signals is instructed (Fig. 1, scheduling table, see "determining a high bit rate threshold" recited in column 3 lines 49-56); regarding claim 15, wherein a congestion control adjuster instructs a corresponding receiver to compress the response signals and if the monitored queue status of the data packets is under a first threshold and over a second threshold (Fig. 1, scheduling table, see "determining a high bit rate threshold" recited in column 3 lines 49-56) and regarding claim 16, wherein a congestion control adjuster instructs a corresponding receiver to compress the response signals and if the monitored queue status of the data packets is under a first threshold and the monitored queue status of the response signals is over a second threshold (Fig. 1, scheduling table, see "determining to compress" recited in column 3 lines 49-56).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the system of Hayakawa with Aweva by using the features, as taught by Guttman et al., in order to compress the signals under threshold. The motivation is to enhance the functionality of the receiver for avoiding congestion in a cost effective manner.

6. Claims 6 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayakawa (USP 5,042,029) in view of Aweva et al. (US 6,894,974 B1) as applied to claims 1 and 7 above, and further in view of Norrell et al. (USP 6,853,637 B1).

Hayakawa and Aweva et al. describe the claimed limitations as discussed in paragraph 4 and 5 above. Hayakawa and Aweva et al. do not disclose the following features: regarding claim 6, wherein the transmitter transmits the data packets at a first transmission rate exceeding 6 Mbps, and the receiver transmits the response signals at a second transmission rate under 900 Kbps and regarding claim 12, wherein the transmitter transmits the data packets at a first transmission rate exceeding 6 Mbps, and the receiver transmits the response signals at a second transmission rate under 900 Kbps.

Norrell et al. disclose a local shared communication medium with the following features: regarding claim 6, wherein the transmitter transmits the data packets at a first transmission rate exceeding 6 Mbps, and the receiver transmits the response signals at a second transmission rate under 900 Kbps (Fig. 1, communication system, see "ADSL supports up to 6 Mbps" recited in column 2 lines 15-32 in background of the invention) and regarding claim 12, wherein the transmitter transmits the data packets at a first transmission rate exceeding 6 Mbps, and the receiver transmits the response signals at a second transmission rate under 900 Kbps (Fig. 1, communication system, see "ADSL supports up to 6 Mbps" recited in column 2 lines 15-32 in background of the invention).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the system of Aweva et al. with Hayakawa by using the features, as taught Norrell et al., in order to acquire the bit rate up to 6 Mbps. The motivation is to enhance the transmission rate of the transmitter in a cost effective manner.

7. Claims 17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aweva et al. (US 6,894,974 B1) in view of Hayakawa (USP 5,042,029) as applied to claim1 above, and further in view of Lohman et al. (US 2002/0154629 A1).

Aweva et al. and Hayakawa described the claim limitations as discussed in paragraph 4 above. Hayakawa also discloses the following features: regarding claim 17, the congestion control adjuster for instructing the receiver to hold or compress the response signals (Fig. 1, network elements, see "congestion control apparatus" recited in column 2 lines 16-34) and regarding claim 19, a congestion control adjuster for instructing the receiver to hold or compress the response signals based on the monitored queue status (Fig. 1, network elements, see "congestion control apparatus" recited in column 2 lines 16-34).

Aweva et al. disclose the following features: regarding claim 19, a communication system, comprising a transmitter for transmitting one or more data packets at least one receiver connected to the transmitter for receiving the data packets and transmitting to the transmitter one or more response signals in response to the received data packets (Fig. 1, packet network, see "plurality of network elements" recited in column 4 lines 19-28), and a multiplexer for multiplexing and transmitting to the transmitter the response signals transmitted from the receiver, and transmitting the transmitted data packets from the transmitter to a corresponding receiver (Fig. 2, network elements, see " multiplexer 50" recited in column 5 lines 53-65); the multiplexer provided with a queue status monitor for monitoring a queue status of at least one of the transmitted data packets

and the response signals (Fig. 2, network elements, see “queue monitor” recited in column 3 lines 39-48). and a congestion control adjuster for instructing the receiver to hold or compress the response signals based on the monitored queue status.

Hayakawa and Aweva et al. do not disclose the following features: regarding claim 17, wherein the multiplexer composed of the queue status monitor for monitoring a queue status and regarding claim 19, wherein the multiplexer composed of the queue status monitor for monitoring a queue status.

Lohman et al. disclose a communication system a communication system for using an improved DSL interface for coupling to a PMP without the use of a separate DSLAM with the following features: regarding claim 17, wherein the multiplexer composed of the queue status monitor for monitoring a queue status (Fig. 2, depicts a high level block diagram of a DSL interface card for providing ATM cells for use in the communication system, see "the control processor 212, works as a queue status monitor, is the integral part of DSL which is integrated with DSLAM” recited in paragraph 0044 lines 1-17) and regarding claim 19, wherein the multiplexer composed of the queue status monitor for monitoring a queue status of at least one of the transmitted data packets and the response signals (Fig. 2, depicts a high level block diagram of a DSL interface card for providing ATM cells for use in the communication system, see "the control processor 212, works as a queue status monitor, is the integral part of DSL which is integrated with DSLAM” recited in paragraph 0044 lines 1-17).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the system of Aweva et al. with Hayakawa by using the features, as

taught Lohman et al., in order the multiplexer composed of the queue status monitor for monitoring a queue status of at least one of the transmitted data packets and the response signals. The motivation is to enhance the transmission rate of the transmitter in a cost effective manner.

Response to Arguments

8. Applicant's arguments filed July 07th, 2008 have been fully considered but they are not persuasive. Applicant states that prior art of Hayakawa merely discloses of claim 1, the “queue status monitor is not an integral part of the multiplexer”. Examiner respectfully disagree with the applicant and states that the above claim limitation does not indicate that the queue status monitor is the integral part of the multiplexer as it recites “the multiplexer provided with a queue status monitor”. It means that the queue status monitor could be inside or outside of the multiplexer. Applicant further states that of claim 1, “detecting if traffic congestion occurs in the system and if traffic congestion occur, then a delay is introduced between receipts of an acknowledgement packet by the system from the system. There is no teaching or suggestion that a congestion control adjuster for instructing the receiver to hold or compress the response signal is based on a monitor queue status". Examiner respectfully disagrees and refers to Hayakawa reference of (column 2 lines 16-34). Applicant states that Hayakawa does not disclose of claim 18, “the congestion control adjuster instructs the receiver to hold or compress the response signals based on the monitored queue status received from the queue status monitor”. Examiner respectfully disagrees. Examiner respectfully

disagrees and refers to Hayakawa reference of (column 2 lines 16-34).). Applicant states that Hayakawa does not disclose of claim 4, "a first threshold and a second threshold, let alone that the queue status of the monitored data packets is under first threshold and over a second threshold. Further, there is no teaching or suggestion that a congestion control adjuster instructs a corresponding receiver to compress the response signal". Examiner respectfully disagrees. Hayakawa and Guttman et al. do teach the first and second threshold and to compress the response signal (column 3 lines 31-41 of Hayakawa and column 4 lines 37-48 of Guttman et al.).

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SYED BOKHARI whose telephone number is (571)270-

3115. The examiner can normally be reached on Monday through Friday 8:00-17:00 Hrs..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang B. Yao can be reached on (571) 272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Syed Bokhari/

Examiner, Art Unit 2616

7/24/2008

/Kwang B. Yao/

Supervisory Patent Examiner, Art Unit 2616